

CLAIMS:

1. Accessory for implantation of a hip-joint endoprosthesis, with a manipulation cup (20), a manipulation joint head (16; 116, 216) with means (22; 122; 222; 223) for orienting the manipulation cup (20) in the acetabulum (12) and with a device to represent the correctly oriented position of the manipulation cup (20), such that by means of this device a bone-milling cutter (28) and/or an impact instrument (27) can then oriented appropriately for placement of the prosthesis cup (34).

2. Accessory according to Claim 1, characterized in that the manipulation joint head (16) comprises a shoulder (22) that extends radially outward around the spherical part (21) and corresponds to the rim (23) around the opening of the manipulation cup (20) so that the latter can be oriented within the acetabulum (12).

3. Accessory according to Claim 2, characterized in that the shoulder (22) is defined by shoudler sections distributed approximately uniformly over the circumference.

4. Accessory according to one of the claims 1 to 3, characterized in that the device used to represent the oriented position of the manipulation cup (20) consists of a guide rod (17) that can be fixed in the bone (11) and corresponds to a guide device (18) attached to the manipulation cup (20).

5. Accessory according to Claim 4, characterized in that the guide rod (17) comprises a screw thread (29) on the end section that can be anchored in the bone (11), so that said rod can be screwed into the bone (11).

6. Accessory according to Claim 4 or 5, characterized in that the guide device (18) on the manipulation cup (20) comprises a component (guide block 18 or guide sleeve) connected to the manipulation cup (20) by way of an arm (19) and having a bore (36) to receive and guide the guide rod (17).

7. Accessory according to one of the claims 4 to 6, characterized by a template (24) that can be fastened to the guide rod (17) and in particular can be pushed onto it, and that is used to orient the head (28) or drive axle (25) of a milling cutter in such a way that the orientation of the cutting head (28) matches that of the manipulation cup (20).

8. Accessory according to Claim 7, characterized in that the orienting template (24) comprises a arm, in particular an angled strap (31), which can be pushed onto the guide

rod (17) and at the free end of which is disposed a direction plate (32), in particular a direction plate (32) provided with marks (0° ; $\pm 5^{\circ}$) to assist orientation of the cutter drive axle (25), such that to orient the drive axle (25) the latter is pivoted parallel to the direction plate (32) while in complete, i.e. gap-free contact therewith, in particular is pivoted parallel thereto into a position corresponding to a prespecified mark (0° ; $\pm 5^{\circ}$; 40°), in particular a prespecified zero position.

9. Accessory according to Claim 8, characterized in that onto the milling-cutter drive axle (25) can be set a bush (26) within which the drive axle (25) is rotatably seated and against the surface of which the direction plate (32) can be brought into complete, i.e. gap-free contact that is maintained during the milling process.

10. Accessory according to one of the claims 1 to 9, characterized by a cup impact instrument (35) that can be oriented with respect to the direction plate (32) of the orienting template (24) in the same way as can the cutting head (28) and its drive axle (25).

11. Accessory according to one of the claims 1 to 10, characterized in that the manipulation cup (20) is provided with a guide device (18) for two guide rods (17) that can be fixed in the bone (11) so as to be parallel to one another (Figure 12).

12. Accessory according to Claim 11, characterized in that the template (24) for orienting the cutting head or its drive axle (25) comprises two through-bores (42) by way of which it is pushed onto the guide rods (17) fixed in the bone.

13. Accessory according to one of the claims 8 to 12, characterized in that the direction plate (32) of the orienting template (24) is bent into a U shape, such that the space between the two limbs (37, 38) of the plate serves to contain the cutter drive axle (25) and/or the cup impact instrument (27).

14. Accessory according to Claim 13, characterized in that the plate limb nearest the surgeon, in particular the upper limb (37), comprises on its end face recesses (40) to serve as markings for orienting the cutter drive axle (25) and/or the cup impact instrument (27) parallel to the direction plate (32) or to its limbs (37, 38).

15. Accessory according to one of the claims 1 to 14, characterized in that the manipulation joint head (16) can be fixed to the neck (15) of a manipulation rasp (14), in particular can be set onto it.

16. Accessory according to Claim 1, characterized in that as a means for orienting the manipulation cup (20) in the acetabulum (12) optical detection means (122; 222) are provided.

17. Accessory according to Claim 16, characterized in that the spherical part of the manipulation joint head (116) comprises a marking, in particular indentation (122), groove or the like, that extends at least partially around the circumference, within a plane that is either perpendicular to the central axis (127) of the joint head or is set at a prespecified angle thereto.

18. Accessory according to Claim 1, characterized in that as a means for orienting the manipulation cup (20) in the acetabulum (12) there is provided a circumferential shoulder (222) that extends outward from the joint head in a plane perpendicular to its central axis (127), in combination with a receptacle that is inclined at an angle to the central axis (127) of the joint head and contains the neck (121) of a manipulation rasp (126), the long axis of which extends parallel to the femoral neck axis (123).

19. Accessory according to one of the claims 1 to 3 and/or 16 to 18, characterized in that as a device to represent the correctly oriented position of the manipulation cup (20) at least one, in particular three fixation rods (110, 111, 112) is/are provided, which extends/extend through a holding device (118) for the manipulation cup (20).

20. Accessory according to Claim 19, characterized in that the fixation rod or rods (110, 111, 112) comprise screw threads (29) on the end sections to be anchored in the bone, so that they can be screwed into the bone (11).

21. Accessory according to Claim 19 or 20, characterized in that to the holding device (118) can be connected a guide rod (117) in such a way that the latter extends approximately parallel to the central axis (115) of the manipulation cup.

22. Accessory according to Claim 21, characterized by a guide element (118) for a cutter drive axle (25) or a bush (26) enclosing the axle, as well as for a cup impact instrument (35), such that the guide element (118) can be attached to or set onto the guide rod (117) and ensures that the orientation of the drive axle (25) and of the impact instrument (35) corresponds to that of the manipulation cup (20).

23. Accessory according to Claim 22, characterized in that the guide element (118) is a sleeve or half-sleeve (119) disposed on a connector strap (131) or similar connecting element.

24. Accessory according to Claim 23, characterized in that the length of the connector strap (131) is adjustable.

25. Method of orienting a bone-milling cutter (28) and an impact instrument (27) for a hip-prosthesis cup (34) in the acetabulum (12), characterized in that initially a manipulation cup (20) is positioned by means of a manipulation joint head (16), in order thereafter to represent this position by at least one guide rod (17) or fixation rod that can be fixed in the bone, and that then after removal of the manipulation cup (20) the position of both the bone-milling cutter (28) and the impact instrument (27) is adjusted with respect to either the guide rod (17) itself or a guide rod (117) that can be attached to a holding device (118) disposed on at least one fixation rod (17).